CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM NO. XXX
FOR
PORT OF STOCKTON
WEST COMPLEX DOCKS 14 AND 15 DREDGING PROJECT
ROBERTS ISLAND NO. 1 DREDGED MATERIAL DISPOSAL SITE
SAN JOAQUIN COUNTY

This Monitoring and Reporting Program (MRP) includes requirements for monitoring the dredging operations, RN1 facility, dredged materials, hydrology, agricultural reclamation ditch, and San Joaquin River newly exposed sediment. This MRP is issued pursuant to Water Code Section 13267. The Discharger shall not implement any changes to this MRP unless, and until, a revised MRP is issued by the Executive Officer. Regional Board staff shall approve specific sample station locations prior to implementation of sampling activities.

All samples should be representative of the volume and nature of the discharge or matrix of material sampled. The time, date, and location of each grab sample shall be recorded on the sample chain of custody form.

Field test instruments (such as those used to test pH, turbidity and dissolved oxygen) may be used provided that:

1. The operator is trained in proper use and maintenance of the instruments;
2. The instruments are calibrated prior to each monitoring event;
3. Instruments are serviced and/or calibrated by the manufacturer at the recommended frequency; and
4. Field calibration reports are submitted as described in the "Reporting" section of this MRP.

DREDGING OPERATION MONITORING

Sampling shall be conducted any time dredging operations are performed, including site preparation and debris removal. Grab samples shall be taken at approximately 2/3 of the distance to the bottom. Water samples shall be taken from the following stations:

Station	Description
R-1	In an area undisturbed by the dredging operation, and not to exceed 5,000 feet up-current from the dredge operation.
R-2	Within 100 feet down-current of the dredge suction head.

Samples shall be collected and analyzed from Stations R-1 and R-2 as follows:

DREDGING OPERATION MONITORING TABLE

Constituent	Units	Type of Sample	Frequency
Dissolved Oxygen [1]	mg/L	Grab/Meter	Once every 4 hours
pH	Standard units	Grab/Meter	Once every 4 hours
Temperature	°F or °C	Measurement	Once every 4 hours
Turbidity	NTU	Grab/Meter	Once every 4 hours
Ammonia	mg/L	Grab [1]	Daily

1. Dissolved oxygen monitoring shall be conducted at two feet below the water surface, mid-depth and within two feet of the river bottom. The temperature and depth for each dissolved oxygen sample shall be recorded.

In addition to the daily monitoring described in the Dredge Operation Monitoring Table, the Discharger shall collect and analyze a grab sample for pH, dissolved oxygen, temperature and turbidity when a magnetic anomaly is being removed from the sediment and lifted out of the river. The magnetic anomaly monitoring shall be collected every hour that in-water work removing the metallic debris is performed.

If monitoring indicates a violation of turbidity objectives, the discharger shall immediately collect samples to be analyzed for acute toxicity, and the following constituents:

Constituent	Units	Type of Sample
OC Pesticides[1]	µg/L	Grab
Arsenic	µg/L	Grab
Barium	µg/L	Grab
Copper	µg/L	Grab
Iron	µg/L	Grab
Lead	µg/L	Grab
Mercury	µg/L	Grab
Zinc	µg/L	Grab

1. Organochlorine pesticides, which include DDT, Endrin, Aldrin, Dieldrin and Endosulfan.

DREDGED MATERIAL DISPOSAL FACILITY, RN1, MONITORING

Monitoring shall commence immediately after dredged materials are discharged into the Dredged Material Disposal facility, RN1 areas B and C. Monitoring shall continue until RN1 Areas B and C are empty of water. RN1 shall be monitored as specified below:

RN1 MONITORING TABLE

Constituent or Condition	Units	Type of Sample	Sampling Frequency
Influent Flow	Gallons	Meter/Gauge	Daily[1]
Freeboard	0.1 feet	Measurement	Daily[1]
Odors	--	Observation	Daily[1]
Dissolved Oxygen[2,3]	mg/L	Grab	Weekly
pH	Standard units	Grab	Weekly
Levee condition[4]	--	Observation	Weekly

1 Inspections for freeboard measurements and odors shall be performed daily during the normal business week (i.e. Monday through Friday).
2 Samples shall be collected at a depth of one foot from each pond in use, opposite the inlet. Samples shall be collected between 0700 and 0900 hours. Monitoring for dissolved oxygen may cease any time that freeboard measurements indicate that level of water in the confined disposal facility is less than 0.5 feet.
3 If odors are detected during the daily site inspection, then the Discharger shall conduct daily monitoring for dissolved oxygen until the odors are abated.
4 Containment levees shall be observed for signs of seepage or surfacing water along the exterior toe of the levees. If surfacing water is found, then a sample shall be collected and tested for pH and total dissolved solids.

Before dewatering, the Discharger shall collect six water samples from the ponded water at RN1 to be analyzed for constituents listed in the Groundwater Monitoring Table.

After dewatering, the Discharger shall conduct sediment monitoring in RN1. The pH of the sediment in RN1 shall be monitored on a monthly basis after the initial placement, until the material is removed. At least two soil samples shall be collected per ten acres, i.e. 120 acres equals at least 12 sample sites, from RN1 and tested for pH. The two soil samples shall be collected from six inches and eighteen inches below the ground surface at locations approved by Regional Board staff.

If saturated soil conditions are found during soil sampling, then the Discharger shall collect a grab sample of the water and analyze the sample as described in the Groundwater Monitoring table.

The information gathered above from dredged material disposal facility monitoring shall be submitted in monthly reports.

AGRICULTURAL RECLAMATION DITCH MONITORING

A. Hydrology Monitoring

Prior to discharge of dredged material, a stilling well shall be installed in the agricultural reclamation ditch bordering the RN1 cells in which the dredged slurry will be placed. Water level, pH, and EC shall be continuously monitored at the stilling well with a transducer and data recorder for two weeks before dredging, during dredging operations, and for at least one month after dredging stops. The information gathered from hydrology monitoring shall be submitted in monthly reports.

B. Water Quality Monitoring

If standing water is found in both the agricultural reclamation ditch down-gradient of the RN1 cells in which dredged slurry has been placed and RN1 cells, then a water sample shall be collected from the RN1 cells and from each ditch containing standing water. The sample(s) shall be tested as described in the Groundwater Monitoring section of this order. Reclamation ditch monitoring shall be conducted on a weekly basis when the above conditions are present. The information gathered from reclamation ditch monitoring shall be submitted in monthly reports.

SAN JOAQUIN RIVER SEDIMENT MONITORING

No later than **24** hours after dredging operations are completed, the Discharger shall collect two grab samples from the river bottom. One grab sample shall be from the same location as the original core sample listed in the Report of Waste Discharge.

Sediment toxicity monitoring shall be conducted in accordance with US EPA's *Methods for Measuring the Toxicity and Bioaccumulation of Sediment-associated Contaminants with Freshwater Invertebrates* (EPA/600/R-99/064) using the following test species, *Hyalella azteca* (method 100.1) and *Chironomus tentans* (method 100.2). Toxicity to either test species is defined as a statistically significant difference in organism survival or growth between the new sediment layer sample and the control sample using the one-tailed t-test. The discharger may use a reference site, which has been approved by the Regional Board staff, as the control sample provided that sediment from the reference site is not toxic to the test species and can meet the test acceptability criteria established for the test method. If the control sample, either laboratory control or reference site control, does not meet the test acceptability criteria for the test method, then the Discharger shall repeat the sediment toxicity test within one week using a newly collected sample.

The Discharger shall report the results of the sediment toxicity monitoring to the Regional Board no later than **48** hours after receiving the laboratory test results. The Discharger shall provide copies of the laboratory data including test acceptability criteria with the report. The Discharger must also send copies of the report to interested parties who request the report in writing.

GROUNDWATER MONITORING

Prior to sampling, groundwater elevations shall be measured and the wells shall be purged at least three well volumes until pH and electrical conductivity have stabilized. Depth to groundwater shall be measured to the nearest 0.01 feet. Water table elevations shall be calculated and used to determine groundwater gradient and direction of flow. Samples shall be collected using approved EPA methods. Groundwater monitoring shall include, at a minimum, the following:

GROUNDWATER MONITORING TABLE

Constituents	Units	Type of Sample	Sampling and Reporting Frequency
Groundwater elevation	0.01 Feet	Measurement	Quarterly
pH	S.U.	Grab	Quarterly
Electrical Conductivity (EC) at 25 °C	μmhos/cm	Grab	Quarterly
Total Dissolved Solids	mg/l	Grab	Quarterly
Nitrates as Nitrogen	mg/l	Grab	Quarterly
Ammonia as Nitrogen	mg/l	Grab	Quarterly
Aluminum	μg/l	Grab	Quarterly
Arsenic	μg/l	Grab	Quarterly
Barium	μg/l	Grab	Quarterly
Boron	μg/l	Grab	Quarterly
Calcium	μg/l	Grab	Quarterly
Copper	μg/l	Grab	Quarterly
Chloride	mg/l	Grab	Quarterly
Iron	μg/l	Grab	Quarterly
Lead	μg/l	Grab	Quarterly
Manganese	μg/l	Grab	Quarterly
Potassium	μg/l	Grab	Quarterly
Sodium	μg/l	Grab	Quarterly
Sulfate	mg/l	Grab	Quarterly
Zinc	μg/l	Grab	Quarterly

REPORTING

In reporting monitoring data, the Discharger shall arrange the data in tabular form so that the date, sample type (e.g., effluent, equalization basin, etc.), and reported analytical result for each sample are readily discernible. The data shall be summarized in such a manner to clearly illustrate compliance with waste discharge requirements and spatial or temporal trends, as applicable. The results of any monitoring done more frequently than required at the locations specified in the Monitoring and Reporting Program shall be reported to the Regional Board.

A. Monthly Monitoring Reports

Daily, weekly, and monthly monitoring data shall be reported in monthly monitoring reports. Monthly reports shall be submitted to the Regional Board on the **1st day of the second month following sampling** (i.e. the January Report is due by 1 March). At a minimum, the reports shall include:

1. Results of dredging operations, RN1, hydrology, reclamation ditch, and soil monitoring;
2. A comparison of monitoring data to the discharge specifications and an explanation of any violation of those requirements. Data shall be presented in tabular format;
3. Copies of laboratory analytical report(s);
4. A calibration log verifying calibration of all hand-held monitoring instruments and devices used to comply with the prescribed monitoring program;
5. A description of all magnetic anomalies and debris removed from the river; and
6. A comparison of the monitoring data with discharge prohibitions, limitations and specifications. The Discharger shall provide explanations of any violation(s) of the requirements and detailed descriptions of all steps taken to minimize the impacts including any corrective actions taken to prevent reoccurrence of the violation in the future.

B. Quarterly Monitoring Reports

The Discharger shall maintain a quarterly sampling schedule for groundwater monitoring such that samples are obtained approximately every three months. Quarterly monitoring reports shall be submitted to the Board by the **1st day of the second month after the quarter** (i.e. the January-March quarterly report is due by May 1st) each year. The Quarterly Report shall include the following:

1. Results of groundwater monitoring. The results of regular monthly monitoring reports for March, June, September and December may be incorporated into their corresponding quarterly monitoring report;
2. A narrative description of all preparatory, monitoring, sampling, and analytical testing activities for the groundwater monitoring. The narrative shall be sufficiently detailed to verify compliance with the WDR, this MRP, and the Standard Provisions and Reporting Requirements. The narrative shall be supported by field logs for each well documenting depth to groundwater; parameters measured before, during, and after purging; method of purging; calculation of casing volume; and total volume of water purged;
3. Calculation of groundwater elevations, an assessment of groundwater flow direction and gradient on the date of measurement, comparison of previous flow direction and gradient data, and discussion of seasonal trends if any;

4. A narrative discussion of the analytical results for all groundwater locations monitored including spatial and temporal trends, with reference to summary data tables, graphs, and appended analytical reports (as applicable);
5. A comparison of the monitoring data to the groundwater limitations and an explanation of any violation of those requirements;
6. Summary data tables of historical and current water table elevations and analytical results;
7. A scaled map showing relevant structures and features of the facility, the locations of monitoring wells and any other sampling stations, and groundwater elevation contours referenced to mean sea level datum; and
8. Copies of laboratory analytical report(s) for groundwater monitoring.

A letter transmitting the self-monitoring reports shall accompany each report. Such a letter shall include a discussion of requirement violations found during the reporting period, and actions taken or planned for correcting noted violations, such as operation or facility modifications. If the Discharger has previously submitted a report describing corrective actions and/or a time schedule for implementing the corrective actions, reference to the previous correspondence will be satisfactory. The transmittal letter shall contain the penalty of perjury statement by the Discharger, or the Discharger's authorized agent, as described in the Standard Provisions General Reporting Requirements Section B.3.

The Discharger shall implement the above monitoring program as of the date of this Order.

Ordered by: _____
PAMELA C. CREEDON, Executive Officer

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(Date)